

# AVIATION WEEK

A McGRAW-HILL PUBLICATION

FEBRUARY 20, 1950



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## NEWS SIDELIGHTS

### Airways Assessments

Civil Aviation Administration's plan for raising the federal airways fee—at partially pay their own way through assessments as users as being as far as possible by the House Appropriations Committee, but congressional leaders already apart. "Through dissatisfaction" with the plan. They complain that it "assumes a position as a proposal for obtaining reimbursement for federal airways for air traffic control, but it does not take into account that the CAA determined the imposition of direct charges for use of airways facilities as "an administrative responsibility" and suggested three types of indirect assessments as additional federal airways gas tax, transportation tax on passenger and cargo revenues, 10 percent reduction in fees for government traffic on scheduled lines.

### By MATS or Airline?

A recent USAF analysis of movement of military personnel about the continental U. S. on MATS planes may result in decisions concerning personnel assignments on MATS in this country except for those involving most movements of troops and equipment. Individual schedules and last at connecting links. Longer flights travel on MATS in this area to a point where it would be considerably more expensive to use the commercial airlines, the study indicates. Any change on MATS schedules or U. S. would not affect status or frequencies outside U. S.

### Titanium Blades

One of first manufacturing applications in existence of the new wonder metal, titanium, is expected to be in turbine engine compressor, both in the class and compressor blades. Since U. S. jet engine manufacturers are now using titanium in the material for these areas, it has a better weight/strength ratio than other aluminum and titanium steel, excellent high temperature characteristics and better corrosion resistance than stainless steel or tantalum. Manufacturers expect that present costs of around \$5 a lb. can be reduced to approximately \$0 costs a lb. when a single plant produces in much as 50 tons a day few years hence. Materials experts believe it is the probable basic airtframe structural metal within 5 to 10 years, both for jet-powered aircraft and space. It is the fourth most abundant structural metal on the earth's surface, next to aluminum, iron, and magnesium.

old Wright Field, now "unit B" of the AMC headquarters, will be under construction in the fall. The building will contain offices of AMC headquarters, Division, between now and fall. To make a basis of whether the project can be brought into the budget for this year. It has a better weight/strength ratio than other aluminum and titanium steel, excellent high temperature characteristics and better corrosion resistance than stainless steel or tantalum. Manufacturers expect that present costs of around \$5 a lb. can be reduced to approximately \$0 costs a lb. when a single plant produces in much as 50 tons a day few years hence. Materials experts believe it is the probable basic airtframe structural metal within 5 to 10 years, both for jet-powered aircraft and space. It is the fourth most abundant structural metal on the earth's surface, next to aluminum, iron, and magnesium.

### Radar Network Plans

Bob are being accepted by Army Corps of Engineers Mar. 14, for construction of "Interceptors" at Fort Huachuca and Ellsworth AFB, Alaska, and at Memphis, Tenn., new Luke AFB. Also, long-range planning is under way of the radio defense system. USAF is building on a high priority basis. Cost of installations without the radio equipment is set at approximately \$1 million each.

### AMC Outlook

While new Research and Development Command of the USAF is still in formative stage, plans are already moving forward to strip Av Materiel Command of much of its research function and leave AMC mainly in procurement, industrial planning and supply. It is understood that the aggregate of costs of the testing and research facilities will be largely in paper, at least for the immediate future. It may well be the advancing situation which cause bifurcation and vindication of

### Watson Lab to Rome?

New installations and equipment as dead at Griffiss AFB, Rome, N. Y., as reported elsewhere in this issue, are presumably part of the long delayed project to move the principal USAF electronic laboratories from Watson Laboratories at Bad Bock, N. J. These have been planned for at least two years, but have delayed repeatedly, first for one reason then another. There are some political angles in the proposed move which make it doubtful whether

the shift will yet be forthcoming for quite some time. Meanwhile, one of the most important fields of USAF research and development is being dismissed and losing time that USAF can ill afford to sacrifice because of the extension.

### Agricultural Aids

Interest of various aviation firms in the development of the USAF-agreed-upon agricultural plane at Texas A&M College, under direction of Prof. Fred E. Wind, director of the school's personal aircraft research center, is being rapidly represented by donations of equipment for the plane.

Continental Motors is supplying an E-115 overhauled engine, suitable of the new 225-hp motor. Cessna Co. is to supply a 150-hp engine. McCord Corp. has a four-cylinder 120-hp engine. Cessna has offered to provide a Wittenberg-type landing gear with engineering to adapt it to the A&M aircraft. Vic Firtham Industries Inc. has already donated a 40-hp adatable propeller for the plane. All interest will be supporting shoulder harness for the plane has been sent by the American Safety Co.

AMC, Prof. Wind's outcome employer, is getting into the development, cooperating with CAA and the Department of Agriculture. NASA's contribution will be to make tests of selected birds to provide data to determine the form in the wake of the model that grants information of the flow effect on birds. NASA staff also will make to redesign the cooling system for the plane at a later date.

### Norsted to Alaska

Importance of the Alaska Defense Command, newest U. S. command in its relationship to Soviet Russian bases, and key to defense against interisland attacks, is again highlighted in disclosure that Lt. Gen. Leon Norsted, deputy USAF chief of staff, and top USAF strategic planner, is being assigned to that post soon, succeeded Lt. Gen. Nathan A. Twining. Twining will return to the U. S. for a new post not disclosed. The Alaska command is a unified responsibility for ground, air and air with combat mission on which a who left Twining and now Norsted have been assigned as theater commander.

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## AVIATION CALENDAR

Feb. 12-26—National Sunbeam's Show, Crystal Cathedral, Garden City, New York, N. Y.  
Feb. 27-Mar. 1—Industry meeting, American Society for Testing Materials, Hotel W. Penn, Philadelphia.

Mar. 1-2—AIAA-AIAA Aviation Conference, Midway-Park-York, Hotel Shoreway, La Guardia & Bayview, Shoreway Clarendon of Commerce, chairman.  
Mar. 12-18—SIPFA committee on rotors and aircraft for production, Hotel St. Steven, New York.

Mar. 18-20—AIAA annual February air-schedule operations meeting and annual aircraft Agreements Aviation Conference, Hotel Texas, Fort Worth.

Mar. 25-27—annual meeting, American Steel Builders' Assn., National Hotel, Park Inn, Washington, D. C.

Mar. 26-28—annual convention Institute of Auto Engineers, Hotel Commodore, New York City.

Mar. 24-27—annual flight precision meeting, sponsored by the Institute of Auto Engineers, Stevens Hotel, Chicago, Illinois.

Mar. 28-31—National Plastics Exposition, sponsored by Society of the Plastics Industry, New York City.

Mar. 30-31—seventh annual helicopter show, sponsored by the American Helicopter Society, and the Institute of the Aerospace Sciences, Sun Palace Hotel, Philadelphia.

Apr. 4-6—Transport and Maintenance conference, Air Transport Assn. Hotel Continental, Kansas City.

Apr. 4-6—International Plastics Exposition, sponsored by the Chicago Technical Services Council, Stevens Hotel, Chicago.

Apr. 16-18—Annual convention, American Society of Lubrication Engineers, Hotel Statler, Detroit.

Apr. 16-30—annual business meeting, Army and Air Force Engineers, Hotel Roosevelt, New York City.

Apr. 26-28—National Assn. of General Contractors, Hotel Carlton, Cleveland.

May 1-6—Midwest conference on food processors and the national meeting of the American Plastics Society, Hotel des Champs, University of Illinois, Urbana.

June 10-11—National Accountants Assn., annual convention, Hotel Statler, St. Louis, Mo.

June 12-15—North American 1958 convention, Ft. Clark, San Antonio, Texas.

June 26-30—15th annual meeting, American Society for Testing Materials, with 14th Annual meeting of the committee on aircraft materials, Civic Center Hotel, El Paso, Tex.

July 10-Aug. 15-17th National Sewing Contest, Grand Prairie, Tex.

### PICTURE CREDITS

12—20-21—Courtesy of the Ohio Seamless Tube Co., Columbus, Ohio. 12—21—Courtesy of the Ohio Seamless Tube Co., Columbus, Ohio. 12—21—Courtesy of the Ohio Seamless Tube Co., Columbus, Ohio. 12—21—Courtesy of the Ohio Seamless Tube Co., Columbus, Ohio. 12—21—Courtesy of the Ohio Seamless Tube Co., Columbus, Ohio.

## NEWS DIGEST

### DOMESTIC

A PAA flight steward was killed when he fell through the floor of a Stratocruiser 5000 ft above central Long Island, N. Y. Several hours later, an Eastern Air Lines flight steward was down through an open door, but caught onto the close doors and held while the plane made a stop at St. Petersburg, Fla. He was unharmed.

An East Park Assn. President David Behrman reported that he and his independent group have been instrumental in congressional legislation which would set up as an independent air safety board of the 3000+ year members with up-to-date tools to take over the activities of CAB's Safety Section. Two members would be pilots. No officer or director of an air carrier would be appointed to the board. He also would authorize CAB to investigate and report, with recommendations, to an crash in CAB and FAA.

A federal court has confirmed TEMCO's plan for amalgamation of the bankrupt Locomotive Airplane Corp. Court may possibly approve the plan but could not give confirmation until two-thirds of Locomotive's creditors approved.

The Office has offered testimony in the New York Metropolitan area before another case to the effect that the aircraft would be unnecessary and "useless." Paul Atkins, second assistant postmaster general, told the CAB last year that present ground handling facilities in the area are adequate and Los Angeles helicopter service, sponsored by the PO, had not come up to expectations.

San Diego Chamber of Commerce is asking a variance to Southern Cal. laws to accommodate the glider flight of John F. Montgomery in August 1887. The request appears to be a "useless" one for the moment. Definition of the parameter, which will be in the form of an 80 ft. stainless steel shell, will take place next summer.

A Clevite-Wright Corp. chief, who brought the following charges: Robert L. Estes resigned as senior vice president in charge of remedial operations (he was also a director of the Wright Aircraft Corp.), J. F. McCarthy has been elected to the newly created post of vice president-finance. Peter J. Murphy, Jr., formerly executive secretary, has been elected secretary of C. W. and the Wright Aircraft Corp., and Henry W. Strong has been appointed assistant treasurer of the two corporations. McCarthy previously was vice president and treasurer of C. W. Office of treasurer was not filled.

British Aerospace Airlines thinks it will be able to meet its target deficit reduction of \$1.3 million, set for 1968/69. In 1968/69, deficit was \$7.756,400. For the first six months of the current financial year, deficit was \$7.650,000. Last year, over the same period, it was \$2.911,000.



### QUESTION:

Why is the SAC circuit step the aircraft power of aircraft and not pilot's power through the Master's Paragraph?

### ANSWER:

Flight power up the step was established to provide "independence" for the private aircraft. It is usually without the pilot's right to make any changes in the aircraft's equipment caused to him. United has the right to change equipment and



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Keep your eyes open for the familiar green and white emblem of Cities Service at private and municipal airports alike. Use these famous products—

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## WHO'S WHERE

### Changes

► **New Appointments**—J. M. Spangler, a president of Union Carbide and Carbon Co.'s National Carbon division, B. C. McMillan, Jr., has been appointed to the general staff of Rhône-Poulenc, Inc., Paris. Pauline, Inc., division of Raytheon Corp., named D. M. Rogers chief engineer. Thompson Co. appointed E. E. Brown director of research. His work formerly chief engineer, is post titled by B. T. Verner.

► **Retirement**—Aerospace Corp. named John H. Bahnsen, 65, as manager of its station at Los Angeles Airport. Gil Northam will direct the newly created military relations department at Marquette Aircraft, Inc. James M. Bagley will be production test pilot on Northrop's C-117. Robert Farnsworth, formerly manager of Lockheed's Signal Lab, becomes

New Britain-Danbury division of New Britain Machine Co. named Elmo Hill a representative in the Chicago area and Jim Glass to its Denver office. Robert A. Farnsworth is the new Univ. of Akron assistant director of aeronautics and space, while in the past he was director of research. Col. Frank E. Cook will join Minneapolis-Honeywell Regulator Co. as director of aero engineering.

► **Sales Shifts**—McKenna-Terry Corp. named John W. Winkler general sales manager of Lockheed Avionics Service, Inc., and its subsidiaries. Hellmuth Obata & Kassabaum, National Office, Inc., named William A. Ferry manager of agency sales. He succeeds John M. Stachuk, now manager of N.Y. City's engineering department.

► **Worrell**—F. F. Worrell, a former Army Lewis' new director, traffic and sales manager in the Houston area.

Norman Kilduff has been appointed by Western Air Lines as district sales manager for the area encompassing the East Bay area and San Joaquin, California, districts.

► **W. W. Clark**—In charge of sales and contract administration, for Cities Service Co.

► **E. L. Davis**—A United Air Lines' cargo sales representative in the San Francisco area. F. H. Clark leads sales for the Standard Carbon division of Westinghouse Electric Corp.

### Elections and Honors

John T. Tripp, Texaco president, will chairmen the aviation division of the 1950 Mid-Continent and Olympic of Greater New York. William L. Pfeiffer, chairman of the division, received the Order of the Star of Danes, Nobility in Rome. Ray G. Gun, Donald N. Yost, chief of Texaco's Air Weather Service, will serve in vice chairman of the U.S. delegation to IOMO.

Joe L. Caudill and Edwin A. Link were elected to the board of directors of Reliance Airlines.

## INDUSTRY OBSERVER

► Special ground-handling tests on the North American T-25 trainer at Edwards (Muroc) AFB included passenger blowouts of the tires while in high speed ground run. During and after blowouts in each of the tires, bounded by hydraulic stops, the three-gear plane demonstrated its ground stability, and advantages of a new automatic nose steering solid carburetor designed to break loose, when pilot makes them too sharp.

► Second test flight of the TF-93A North American jet fighter scheduled later week at Edwards AFB was to be with afterburner installation on each of the Pratt & Whitney J-48. Engine has been run 30 hr with afterburner installed but with the afterburner operating only a short time.

► Installation of low target automatic radar and radar at 14 North American F-86F jet fighter bombers is being completed at Langley Field, for testing the new Chance Vought high-speed 20-ft span target glider. Two bombers are hydraulically operated and controlled from the tail gunner position in the bombers. Tests have already been run on an experimental installation at Edwards AFB, including fighter attacks on the target, with low maneuverability after target is radioed out to operational distance behind the bomber.

► Licensing is getting as D-415A carburetor 190 hp angular ratio export field in addition to growing use of the powerful American planes SAAB Alvik Co., Sweden, has recently ratified the engine experimentally in the SAAB Saab three-place monoplane, in replacement of the former 145 hp de Havilland Gipsy Major 18.

► Two Bell helicopters, sent to Italy for use by the Rockefeller Institute to conduct studies on the island of Sicily, have since been turned over to the Italian Air Force.

► Lockheed Aircraft will have built more than 2000 jet fighters and trainers of the F-104 type or its development when it completes present order.

► NASA has decided not to run its big 6 by 8 ft supersonic wind tunnel at the Lewis Propulsion Laboratory in a "hot" test again until adequate noise shielding is developed to cut down the extremely undesirable high-pitched sound produced in the fast high-supersonic jet engine tests. Sleepy neighbors were so aggravated by fact that tests are run late at night in Cleveland electric power facilities can make available the 87,000 hp. needed to power the tunnel.

► As soon as the Convair-Laté turboprop version is ready for selling, prospective for a number of export sites are seen. One American export representative said that potential foreign purchases of American aircraft are in South America, Asia and Europe. He is beginning to look down their lists of conceivable powered transports, and to suggest that they would like to tell business agents when turboprop and turboshaft variants are for sale.

► De Havilland Aircraft of Canada Ltd. has completed arrangements with the British parent company for selling the de Havilland Jet-jet aircraft in North America for approximately \$1.25 million.

► Piasecki's twin-engine PD-33 helicopter design combining some features of the two new Navy Piasecki, the HRP-2 (PD-2) and the shipboard HUP-3, was originally aimed as an alternate for the USAF Arctic rescue helicopter competition, but is now being considered for the Navy anti-submarine helicopter evaluation.

► Air Force experiments with the North American four-jet RB-46 in a reconnaissance phase, equipped with swing-tail tanks, may result in the USAF taking another look at the slender Convair XB-46 four-jet competitor to the B-52, as another likely high speed interceptor.

## Views Aired on Transport Test Methods

Plans differ widely as pilots, operators, manufacturers, CAB, CAA study problem.

By Charles Adams

Widely differing viewpoints over the best method of ensuring highest operational dependability as new aircraft are becoming apparent in government and industry studies made this past week with an eye to the approaching era of mass air transport.

Out of the disagreement is an obvious. Neither the manufacturers nor the airlines will have proposed new testing procedures or operational instructions which might add many thousands of dollars to the cost of new transports. The manufacturers especially are wary of plans which would permit government agencies or contractors to "inspect to death" a new plane and delay its introduction into regular service.

But the Civil Aeronautics Board sees safety as the goal to reach; the carrier must become more broadly responsible for transports and act as a research foundation, and the CAB is seeking to do all the挡的 the drawing boards.

► **Complaints Sound.** Numerous suggestions for changing present testing procedures for new transports and improving methods of reporting and correcting operational deficiencies have been received by CAB. A workable compromise plan is being sought.

Inherent in the problem was affected when a recent CAB meeting to consider means of improving operational dependability drew representatives from the Air Line Pilots Assn., Air Transport Assn., American Airlines Assn., Flight Engineers International Assn., CAA, U.S. Air Force, Military Air Transport Service, consulting firms, Comair, Scientific Interests and Foreign Bureau.

The group differed from the principal plan for supplementing or altering current procedures for ensuring operational dependability.

► **Cargo Proposals.** One plan, which has received attention for several years, calls for basing the use of new-type transports to cargo and mail service for a fixed period before placing them in passenger operations. For example, it might be required that before a new

transport plane carries passengers, three units of the type would be plated as regularly scheduled surface carrier load test, express and cargo fits at least 1000 hr each.

It has often been suggested that the best single approach to testing new transports is to conduct a single series of tests for an extended period of time so that these aircraft experience would always lead all passengers flying units by at least an aggregate of 1000 hr. This single stage of new-type transports as cargo service is expected by its proponents to contribute to safety without subjecting the paying passengers to the consequences of early operational difficulties.

It is assumed that the safety of crew members in these test cargo-carrying planes could be taken care of by providing them with facilities and other appropriate safety facilities.

► **Plans Vary.** **AAIA.** A strongly argued view is that the new transports should be tested on all new and actual transports. The main reason is an aggregate of 1000 hr of the testing and also would like to keep the first test stage alone as an aggregate of 1000 hr ahead of other transports of this type.

Cargo service testing of new transports was endorsed by the President's Air Force Commission in its report of January 1949. The commissioners cited competitive business factors which result in a strong tendency to put any new plane into regular passenger service as quickly as possible. It was concluded that experience had shown that test flights have not been long enough to permit mechanical or design weaknesses to become apparent under normal operating conditions.

► **CAIA.** Voitzenhauer, Lederer, Lechner, Lechner advised to U.S. Aviation Ab division, Inc., and his studies had shown that the cargo service proposal is far from a panacea for the bugs in new transports.

He concluded that test flights put in cargo service might return some revenue, but there might be up to a year's delay in delivery of subsequent planes of the same type while the test aircraft rolled up their 1000 hr in scheduled cargo service.

During the test runs, the wannabe tester would either have to target his

aircraft would put for itself. It would be the heavy direct losses incurred by the airlines when the Lockheed Constellation, Martin 2-62s and Douglas DC-4s were grounded during the past several years and observed that indirect losses from piloting craft holdings greatly exceed the cost of all in turn-around.

► **Losses Estimated.** Four-month grounding of the DC-6 when 96% of the plane was in service, or similar for 12 months, would result in a potential revenue loss of over \$45 million to the carrier operator, ALPA asserted.

The pilot group said that present Civil Air Regulations provide for about 150 hr of air service testing. Having 150 hr still to go to comply with ALPA's recommendations.

At a short operating cost of \$180 an hour, the team said that the DC-6 could have been landed with additional 850 hr for a total of 1500 hr. And this cost could be cut down by the removal of cargo revenue received during the test period. There is a new 1-month air cargo volume to support such an operation, whatever a few years ago there was not.

Additional mail passengers would not carry by CAB as a direct result of grounding, totaling over \$3 million in the use of the Constitution and over \$5 million with regard to the DC-6s. ALPA also noted that 1000 hr of shakedown flying would be partitioned by its contributors to solving subcritical problems, such as engine or instrument malfunctions, which after new equipment is placed in operation. Flight and maintenance crews would have more time to get acquainted with the plane.

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► **Efficiencies Proposed.** Lederer quoted the likelihood that a few test planes would show up unchanged difficulties in the way anticipated. One thousand hours of additional testing



22,000 HORSES WILL POWER CONVAIR'S GIANT XP5Y-1 FLYING BOAT

First photos of the four powerful turboprop Allison T-40 engines installed in the new Convair XP5Y-1 flying boat sets of these made Aeropropulsion propellers at carrier station. Each T-40 is actually a pair of turbines, mounted one above the other in tandem. Each engine is rated at 5500 hp and a combined power of 22,000 horsepower. The new Navy needs and ASW flying

patrols have its hull designed on the as-yet-developed principle of increased ratio of length-to-beam to achieve greater anti-drag effect without hydrodynamic losses. It is combined with a design top speed of 390 mph and has a 13,000 ft gross weight. A 146 ft. long. Power plant includes four 1000-hp turbos with necessary fuel tanks in addition to wing tanks. New large radars are being tested. Fuel tanks will be refueled when the aircraft is being stored under the fuselage, running a fire.

► **Expensive Propulsion.** "My thinking," Lederer declared, "is that more service testing is not uniformly going to be productive. It is not going to be productive if the cost of the test plane is so high that makes the gap which already exists between the cost of planes and the price that can be paid for them. The best place to receive bugs is in the drawing board or in the test laboratory. It is also the least expensive method."

He still emphasizes that 1000 hr of service testing provided "only a padding amount of safety." Some bugs don't turn up for three or four years. They are still appearing in DC-3 after several million hours.

Some units of new-type airplanes go along 1000 hr without major trouble,

while others in the same areas show bags strongly in a few hours. In this situation, it would be responsible to integrate a large fleet of aircraft by assigning one to every 100 miles of highway.

► **Sophisticated Test-CAM** pointed out that aircraft placed such as the Starship aircraft rarely have 1000 hr of testing before the first set is placed in regular passenger service. Her inclusion 600 hr of manufacturer's tests, 75 hr. of Air Force, 200 hr. of service and service tests, and a maximum of 100 hr. of proving trials over the entire while the planes will be operated.

But CAA believes even the 775 hr. may not be sufficient time. It knows that all the bags won't be found in 775 hr. at 1000 hr. It would like to see one aircraft get a lot more testing than the rest receive.

One CAA official pointed the idea of continuing needed service tests on those planes for 1000 hr. each. He and 6000 hr. would be more logical.

► **Flight Engineers Concerned**—A representative of the Flight Engineers International Assn. and his group certainly bring a responsible test period but couldn't say whether that period is 100, 300 or 1000 hr. "It has been well demonstrated that troubles do not come up early enough in a plant's utilization so that we could economically provide a test period," he declared.

Some observers believe that the only way to extend the service testing period substantially would be to have the government stop the test at best 775 hr. But the flight engineers and the manufacturers have shown an enthusiasm for an extensive computerized prototype development in testing programs.

► **Computer Standardized**—Another proposal advanced at the industry meeting for improving the increased dependability of new aircraft provided that a separate, solely service computer be established for each aircraft new passenger carrying aircraft. (Aviation Week, 2/6/68.) Members of the committee would draw all their time to work. Their only purpose would be to adequate and update all of the programs type logic developing software and hardware in areas where flight computer operation is desired.

Aircraft company engineers, airline maintenance men, pilots and government representatives would be on the committee, which would start functioning as soon as it became evident that the new passenger plane was to be all set. The group would have access to all available prior to completion of the factory and later at the operating bases.

The committee would keep a detailed record of all inspections, studies and service tasks, and would quickly notify the group.

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all parts concerned when remedial steps were necessary. It would follow up the notifications by developing the necessary parts and tasks by the manufacturers and manufacturers. The group would function until such time as it was found that the particular type airplane exhibited by its service a high degree of mechanical dependability.

► **CAB Staff Men-Technical Staff of CAB** was instrumental in advancing this plan. But the manufacturers, CAA and some of the airlines have demonstrated little enthusiasm for it. Several urban would favor the committee approach if the group established any service and establishing representatives and was not government controlled.

Aircraft company engineers, airline maintenance men, pilots and government representatives would be on the committee, which would start functioning as soon as it became evident that the new passenger plane was to be all set. The group would have access to all available prior to completion of the factory and later at the operating bases.

► **No Responsibility**—AAIA thinks the group would be in a position to recommend and not have any responsibility for things that did not go the way they should have. AAIA believes the new plane would be on the committee, which would be responsible than those now working in the aircraft plants.

CAA representatives reflected out that the type certification board perform much the same functions as the type certification board committee. These type certification boards continue to function after the new aircraft is operational and goes into scheduled operations.

► **Reporting System**—Third proposal considered at the Washington meeting involved establishment of so-called "safety systems," which would utilize the full cooperation of manufacturers, operators and CAA in a safety program based on full reporting of system deficiencies, effective analysis and appropriate corrective action. AAIA from the start, pointing out that safety is a continuing process depending upon assimilation of experience under diverse operating conditions over a long period of time.

This safety system basically would follow the same principle and now as the daily numbered-based operating report, except that more strict would be placed on direct cooperation between the operators and the manufacturers. Now a year old, the present system assimilated daily reports of mechanical difficulties by such entities as other owners, CAA and the manufacturers. All parts concerned should know of any trouble within 48 hours.

The procedure has worked out well, and the military has adopted a similar plan.



RESCUE COMPETITION WINNER

First picture of the new Bell 206B JetRanger helicopter designed for 12 passengers in the most USAF flight rescue competition ever conducted in AVIATION WEEK. With 313 direct lift-rated tandem seats, it would perform rescue of nine of a total of 12 passengers by the 1000 hr. service previously disclosed. Engine is interchangeable with power plants of the Grumman G-44 or aircraft equivalents. Landing gear is no ingress/egress combination of air, seal, and inflatable interior bag four which Bell 206B has "new" phrase? Strongly hydraulic basic for service work is controlled by cockpit floor console. Besides passenger door shown, there is a rear cargo door on left side of fuselage. Most difficult admissions are available on the contact indicator a package of 22 heliports for \$12.5 million. Advantage of the contract is expected to give Bell 206B a headstart, continue, over competing manufacturers of large helicopters in the commercial as well as military field.

## \$500-Million Program up to House

Pacific and West Coast areas to get large share of public works cash; Muroc listed for \$29 million.

► **Planning**—Underground building, missile assembly buildings, telecommunications, space sites, space sites, communications, technical buildings, upper atmospheric research stations.

► **Lock Haven, N. J.**—Naval Aerospace Research Laboratory, \$15,000,000 for rocket development.

► **Albuquerque, N.M.**—AFB, \$6,045,000, including high altitude, missile, payload processing, aviation fuel storage facilities.

► **Wright-Patterson AFB, Mo.**—\$4,071,000, including antenna and storage facilities, site preparation.

► **Jet Propulsion Lab., Calif.**—\$3,751,000, for extension of research and test facilities.

► **Edwards Air Force Station, Calif.**—\$4,080,000, for additional USAF facilities.

► **Other USAF facilities**—Authorizations (appropriations) must be provided before final construction can move forward.

► **Flight AFE, Tex.**—\$4,717,000, for aviation fuel storage and fueling facilities.

► **Computer AFE, Calif.**—\$4,595,000, including research, storage and storage facilities.

► **AFM, Calif.**—\$4,574,000, including research, storage and storage facilities and site acquisition.

► **Edwards AFB, Calif.**—\$3,479,000, including antenna, engineering test facilities.

► **Electron AFB, Tex.**—\$37,800, for antenna, engineering test facilities.

► **George AFB, N. Calif.**—\$3,114,500, including laboratories for automotive radio and television radio.

► **Lockheed, Calif.**—\$3,000,000, including antenna, engineering test facilities.

► **Mountain AFB, Calif.**—\$1,783,200, is tracking station and storage facilities.

► **Hood AFB, Tex.**—\$1,369,467, for antenna, engineering test facilities, and site acquisition.

► **Great Falls, Mont.**—\$1,351,000, including antenna, engineering test facilities and site acquisition.

► **McMurtry AFB, N. Mex.**—\$1,090,800 for fuel storage.

► **Mountain AFB, N. Mex.**—\$7,079,725, in



BIOMIMICRY COPTER

► **Blacksburg, Va.**—\$1,000,000 for EXEL-copter a powered by 300 hp. Franklin, nose wheel diameter is 18 in., tail rotor 7 ft. 3 in., fuselage length 19 ft., weight empty 950 lbs., loaded 1400 lbs., capacity of the craft is pilot and one passenger.

► **Wright-Patterson AFB, Mo.**—\$31,000, for 374-seat rocket test range.

► **Wester Harbor Naval Communication Station, Me.**—\$19,800, including communications and high frequency direction finder facilities.

## If Late . . .

If this issue of AVIATION WEEK is late in reaching you, the delay can be attributed to a disruption of mail service by the management of Transoceanic Airlines of America, a unit of the coast airline.

The staff regards that management of service, but it is beyond the editor's control.

► **One AFE, Mo.**—\$1,110,000, for fuel storage and storage.

► **Holdings AFB, Mo.**—\$6,000,000, for storage and auxiliary laboratories.

► **Jet Propulsion Lab., Calif.**—\$2,500,000, the target of the laboratory.

► **Wright-Patterson AFB, Ohio.**—\$1,345,000, including engineering laboratory building, computer test building, wind tunnel, wind tunnel, addition to research test building.

► **USAFA**—\$1,000,000 for additional USAF facilities at the base.

► **Other USAF facilities**—Authorizations (appropriations) must be provided before final construction can move forward.

► **Flight AFE, Tex.**—\$4,717,000, for aviation fuel storage and fueling facilities.

► **Computer AFE, Calif.**—\$4,595,000, including research, storage and storage facilities.

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# Perrin Likely Basic School Site

Air Training and Materiel Commands are working out details for civilian operation of basic flying school.

Approximately 70 schools are being seriously considered as potential civilian operators of the USAF basic flying school to be established by Air Training Command under Air Materiel Command control.

From AF, Sherman, Tex., of the first basic flying schools now run by USAF, will probably be selected as the base to be operated by a civilian operator. Others are Randolph AFB, San Antonio; McConnell AFB, Wichita, and Goodfellow AFB, San Angelo.

► **Bigger Perrin—Wichita.** When last visited, that Site, Tex., Canada, has been operating the revised USAF payroll and personnel from the Sherman area, but that USAF officials have told *Air* that Perrin AFB may be in for a bigger than-ever share of the civilian contract training if conducted in a more efficient base.

Present plans call for only one such experimental school operation, plus the possible training of "a small number" of aircraft and engine mechanics at civilian technical schools.

► **Lower Cost—Aeronautical Training Society.** Speculations for most of the large medium aircraft schools are being conducted through *Aeronautical* Capt. Michael B. Ballew, director of the Systems School of Aerospace, Tulsa, that the civilian operators could conduct basic USAF training at lower cost than the USAF could do it itself.

Referring to the experimental training contract just given by the second Standard Research Institute study to achieve efficiency and economy of civilian contract flight training as compared to that done by the USAF at its own installations, if the civilian contract plan is successful on the single aircraft school, USAF has very little reason for not expanding it to include all of the basic flight training under similar arrangements.

► **Negotiated Contract—Original USAF plan for a negotiated contract for the first school operation are expected to continue, with approximately 23 of the large schools which conducted USAF flying operations during World War II expected to be invited to compete for the experimental operation.**

► **Competitive.** Some details of the invited school representatives are now being worked out between Training and Materiel commands but it is believed probable, however, that bids will be taken in the next 2-3 months.

Meanwhile comparison of one of the civilian-operated flight schools in

Air Force has frankly been using its Air Training Command as a means of learning what a successful flying school is that can be possible in training combat and transport units under Secretary Johnson's economy program which holds the USAF down to 43 groups.

► **1950 Potential.** Actual potential of the large civilian flight schools is probably indicated by a recent AT&S survey of its members who operate 31 such schools with 20 routes. These schools have in operation 685 airplanes. Wayne Wenzlau, AT&S secretary, estimates that without expanding present facilities the schools in his organization could set up a flight training program for 9000 cadets.



NEW C-129 DETAILS SKETCHED

Fairchild's revolutionary new C-129 pack plane, developed from the C-119 and C-121 freighter planes, is scheduled to fly in April and is now being completed at Hagerstown, Md. Lower section of plane is a flatbed pack which can be easily built in photographic laboratory or other battery equipment. Upper fuselage component fits flush against pack and has some accommodation for flight without pack. Fairchild considers the C-129 a promising for exploring possibilities of military and civilian civil cargo use of mobile aircraft, such as large air freight.

► **quadcopter landing gear.** The C-129

can, and will be for separating the pack by towing on its own wheels. Cutaway photographs show close similarity of plane to C-119 with similar forward entry wings, tailbooms, empennage, powerplants and propellers. Upper fuselage component fits flush against pack and has some accommodation for flight without pack. Fairchild considers the C-129 a promising for exploring possibilities of military and civilian civil cargo use of mobile aircraft, such as large air freight.

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# USAF Bid Information

## AF Awards

► **Air Materiel Command Procurement Division.** Requests available to Air Materiel Command, 100 AFMC, Wright-Patterson AFB, Ohio, for contracts in the amount of \$100 million or more. Requests for further information should be addressed to Contracting Officer, AFMC, Wright-Patterson AFB, Dayton, Ohio, or telephone: MCPCPTN-72.

### AMENDMENTS

► **For more information, call 446-3800.** McDonnell Douglas Co., 200 Main, St. Louis, Mo. 63166. Contract No. AF-33-66-1000. Requests for further information should be addressed to Contracting Officer, AFMC, Wright-Patterson AFB, Dayton, Ohio, or telephone: MCPCPTN-72.

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► **quadcopter landing gear.** The C-129

can, and will be for separating the pack by

of the seven AMC procurement field offices. This will enable firms to see specifications before writing or telegraphing for their own bid sets.

► **Procurement field office location.** Boston, Mass., Boston, 110 Main, Government Center, Boston, Mass., 02108. Contract No. AF-33-66-1000. Requests for further information should be addressed to Contracting Officer, AFMC, Wright-Patterson AFB, Dayton, Ohio, or telephone: MCPCPTN-72.

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# AERONAUTICAL ENGINEERING



**ROCKET SLED** with subject tested for crash impact test. Knob-like blades are suspended below sledcarriage. Windscreen covers camera and telemetering antenna to pick up seat's motion. Four motors deliver enough thrust to push sled . . .



**AT 240 MPH SPEED** down 1300 ft. track. But with whistlers, 3750 lb. sled never goes beyond more than 153 mph. Rats are raised in nearby control tower by space-time recording system which operates through switches mounted along track. Sled . . .

## 'Crash' Sled Aids Impact Studies

Air Force volunteers, lurching down a 2000-ft. railway track in a rocket-powered sled at speeds up to 153 mph and then coming to an abrupt standstill, are representing in field test how much crash impact force the human body can take and still survive.

The tests are being conducted at Edwards AFB, Marine, Calif., and already have proven that persons, properly supported, can take deceleration up to 36G and peak forces up to 100 G without harm.

The experiments point to the fact that the human body, in the right circumstances, is much tougher than is generally believed—backing up findings

of Cornell University's crash safety research project which is studying light plane crash survival chances.

► **Team.**—The volunteer Air team, consisting of three officers and five enlisted men, a headed by Major John P. Stapp, flight surgeon and aeronautical research scientist, who took the first ride in the rocket sled. Before this, all experiments were with a dummy and not without incident—it once broke loose from an early type harness and catapulted out 500 ft. ahead of the sled with its record-shattering load.

After determining tolerances of the human body's resistance to impact forces, major aim of the group will be

in aid development and test of equipment for protecting crews and passengers involved in crash landings and ditchings.

On another railway track at Muroc this one is two miles long—officer team at speeds up to 1100 mph is being run on a rocket sled which is equipped with an ejection seat and dummy. These tests are to determine the speed limits of present type seats and to find out what added face protection the pilot may require when he is ejected from an aircraft traveling at supersonic speed.

All test equipment was developed by Northrop Aircraft, Inc., and is being operated by company personnel.



**DECCELERATES IN 30 FT.** when it hits 100 mph. Impact forces are equivalent to those in actual crash landings. Minimum speed with volunteers is 12 Gs—during

from 130 to 75 mph in 4 sec. track pressure measured backwards showing least effect. By change in power and using different combinations of fans . . .

**WITH POWERFUL BRAKE,** the deceleration can be controlled from 0 to 60 Gs. Hydraulics, clasp-type body harness, 180 in. of seat, one over 35,000 lb. force each.



**STRESS ANALYSIS** of human body under impact is made possible by supersonic whistlers which generate signals from

muscles to control timer signals from whose paper stretched to voluntary. Acceleration data also are transmitted by radio



**CONTROL PANEL** in lower case track has four switches, provides looks settings to be altered even after sleds are fired.



**AT PEAK ACCELERATION**, subject's head and body are thrown back against seat. Volunteer is Major Stapp, at change of seat.



**IN 15 G DECCELERATION**, Stapp pitches forward violently against harness. Device on shoulder records G forces during impact.



**SUPERSONIC SEAT EJECTION** experiments are conducted in the 2500-ft. sled using an two-seat, piston-hydraulic tank. Five rockets, producing 11,000 lb. thrust each, are used for speeds up to 1300 mph. Front-sitting rocket fires up sled after . . .



**DUMMY IS CATAPOULTED** with seat. Camera and telemetering devices record trajectory. This shows a static test.

## Ambassador Tried In Asymmetric Tests

Recent asymmetric flight trials of the Ambassador, twin-engine transport developed by the British firm, Avroport, Ltd., have revealed performance gaps which should prove of interest to U.S. aircraft operators and designers.

During a V<sub>1</sub> (maximum control speed with all engines on), the lowest speed at which the Ambassador could be held in a weightless field with the right engine in cutout and the left at takeoff power, was 95 knots. When the left engine was cut and right engine was in takeoff power, speed could be dropped to 85 knots. That was further reduced 85 and 86 knots with a 5 deg. bank, as permitted in British Civil Airworthiness Requirements.

In V<sub>2</sub> (maximum control speed as at near ground) roll experiments, with flaps in takeoff position, the nose-up pitch could be fully controlled at 90 knots after cutting one engine. Allowing for a "factor of unacceptability" that speed was at 105 knots for right engine failure and 97 knots with the left engine off. With one engine in cutout and the plane steeply banked away, with left engine cut, however, the Ambassador was

kept on a straight heading, but dropped nose-down to the ground before climbing away at 105 knots.

According to reports, the Ambassador, at its present maximum gross weight, has a high maximum control speed of 85-90 knots (Mach 0.85) and a safety speed of 100-105 knots (Mach 0.85). Safety speed is defined as one giving a "wayback margin over . . . maximum control speed and over engine-off rolling speed." The craft is said to be able to make a smooth and controllable down to an actual stall when flying an only one engine.

British maximum control speed tests through which the Ambassador was passed, are, as applied to safety speeds, set up to determine literally the lowest speed at which it is possible for a pilot of normal skill and strength to recover and keep full control of a craft after failure of one engine. It sometimes is quoted lower than the rolling speed for a plane, since loaded weight of an aircraft during these tests may vary, while rolling speed is given for a plane at maximum gross weight.

Conditions for the tests, split into three groups, are: (1) aircraft must be at a fixed altitude with landing gear extended; (2) aircraft must be able to roll out of a 30 deg. roll; (3) aircraft must be able to descend,  $V_m$  (approach) and landing-lift controls are set for final approach, and it must be possible to

clear suddenly any or all throttles and operate engine(s) to full power without retarding or retarding idle differential.

Avroport reports that during maximum speed checks with the No. 2 Avro Ambassador prototype, as fast as 105 complete stalls were made in one day by G. B. S. Erington, the firm's chief test pilot.

In these still checks, made at maximum gross weight, the craft (e.g. was placed) was, by steps through the plane's range from 10 to 30 percent. At each  $\pm$  position, the craft was stalled 5-6 times with flaps in all settings. Stalls were started at 13,000 ft, 8,000 ft altitude and ended at an altitude of 1,000 ft.

The Ambassador is said to be as stable when fully stalled, that test pilots "feel bright early in unaccepting conditions, still the aircraft through the deep sleep loses" at a rate of descent of about 2000 fpm. This descent speed reportedly can be maintained with the control column off the way back with trim corrected by means of

The same technique was used with the Smith 5-SEZ self pilot in a Boeing 707. With a maximum roll displacement of 4 deg., the transonic descent under automatic control averaged 1600 fpm at a desired speed of 85.95 knots.

## For Vital Control Circuits in Curtiss Electric Propellers



### CHECK THESE ADVANTAGES

- Moisture-proof
- Radio Quiet
- Single-piece Inserts
- Vibration-proof
- Light-weight
- High insulation Resistance
- High Strength and Durability
- Faster Parts Down any Other Connector
- No additional solder required

Write our Sales Department for detailed information.

SORIDA MAGNETIC DIVISION

EDISON, NEW JERSEY

**BENDIX**  
**SCINTILLA**



AIRPORT WEEK, February 28, 1959

## AVIONICS



Flow of traffic flow depends on navigation accuracy.

## Solution To Airport Traffic Jams

New on-call range system shows promise of providing fine positional accuracy within 30-mile radius.

A new range range, which shows promise of narrowing landing扇面 for pilot and locating landing sites in airport terminal zone, was revealed by two Sperry engineers at the recent 15th annual meeting of the Institute of the Aeronautical Sciences, in New York City.

The new device, described by George Licklider and Joseph Lyons as a "precise omni-directional radio range for the terminal area," is currently under development by Sperry Gyroscope Co. for the Air Force's All Weather Flying Division and Watson Laboratories.

• **Fundamental concept** governing its design is that the maximum site at which an aircraft can fly in terminal area depends on the range of the system as set by the limiting factor of traffic capacity; its accuracy must be great enough to meet requirements for peak traffic loads.

Much of the early opportunity to clearing the R-Blocks or polar coordinate class of system stemmed from the lack of azimuth accuracy which today is still its outstanding deficiency.

Accuracies reported for the position errors are better than  $\pm 3$  deg and much higher accuracies are thought to

be attainable. An examination of the present air navigation and traffic control facilities disclosed that no one really knows what accuracies are required to achieve a particular landing rate, nor just what landing rates are feasible. Factors other than accuracy are also involved. The problem is involved in Air Navigation Development Board study program consists of endeavor to determine what landing and takeoff rates and traffic capacities of airports and approach systems.

Present landing rates seem to be up to 20 aircraft per hour. The 10 aircraft per hour rate, set as an objective of the transonic system, is considered reasonable, however, this figure is an estimate.

- **Example**—In describing the need for a possible range map, Licklider and Lyons note, by means of a numbered example, how accuracy of a navigation system may affect the size of traffic flow. Two airports are made:
  - Design capacity of the system shall be 120 aircraft per hour.
  - Final ground speed along the approach path to the runway shall be 120 mph.

The 120 aircraft per hour rate, high as it may seem, is the design rate necessary to handle 45 aircraft per hour without delay. Two Australian, Bowen and Peary, show that the working capacity of a system can never equal the design or maximum capacity without delaying all aircraft infinitely.

The present speed of 120 mph, is taken as typical because it is a convenient figure and approximates present aircraft characteristics.

The first exception provides an average range interval of 30 miles between aircraft. For 120 mph, this equals 1.5 nautical miles.

For these distances to hold, certain areas must be set up.

- Protection areas must be set up so that aircraft 10 miles both the pilot and the ground controller must leave the stipulated position of the aircraft.
- Aircraft must pass the very point of the approach within  $\pm 1$  sec. of scheduled to hold the 30 sec. spacing between aircraft.
- Aircraft must enter the approach with a landing accuracy of  $\pm 5$  deg. to eliminate blocking.

• Approach ground speed must be held to  $\pm 1$  percent or  $\pm 2.4$  mph, if the 120 mph speeds are used.

• Radii of the terminal area or zone through which control must be effected must be 10 miles.

• **Range Consideration**—Without sufficient positional accuracy, ground speed can either be increased or controlled. Consequently, landing accuracy can be compromised. Losses in accuracy



Antennas for new, precision range



## The FLAGSHIP FLEET relies

Today American Airlines has the largest and most modern fleet of transport aircraft in the world. Night and day, week in and week out, one of these Flagships—either a DC 6 or a Convair—takes off or lands every 60 seconds. \* The powerful engines of every single one of these Flagships are lubricated with Sinclair Aircraft Oil. For hundreds of millions of miles through the air over the past fifteen years American Airlines has entrusted this vital job of lubrication to Sinclair.

exclusively  
on SINCLAIR Aircraft Oil

### SINCLAIR AIRCRAFT OIL—Symbol of dependable maintenance

Without interruption for fifteen years Sinclair has aided American Airlines in maintaining exacting schedules, rigid operational standards, and dependable service. American, in that time, has flown more than 350 million miles with no other engine lubricant than famous Sinclair AIRCRAFT OIL. \* For safe, dependable aircraft engine lubrication with less frequent overhaul... it's Sinclair AIRCRAFT OIL.

**SINCLAIR** Refining Company

Aviation Sales, 630 Fifth Avenue, New York City



## 'Big Four' in Lightplane Industry

Reports by top quartet among 10 companies still in personal plane business reflect financial health.

Despite five severe deflation experienced by the lightplane industry, a number of key companies in the group have managed to survive and maintain a good financial condition. Recent financial reports reveal the relative financial health of the larger remaining companies.

The lightplane or personal plane field has suffered to a double disadvantage. As recently as 1948, at least 10 companies were in the lightplane business. Now there are only 10. Some of these remaining enterprises, whose reports have been released monthly, afford interesting subjects for analysis as to their ability to meet current requirements.

During 1948 according to the Personal Aircraft Council of the Aircraft Industries Association, the lightplane industry had total shipments valued at \$14,323,000. Of this total about 87 percent was accounted for by four companies, as follows:

Beech	\$1,779,800
Cessna	644,650
Piper	514,000
Ryan	1,816,000

► **Cessna.** During the first quarter of 1949, Cessna reported net sales of \$1,779,800. For the fiscal year ended Sept. 30, 1948, the company showed net income of \$922,385, compared to net income of \$31,346,075 for the previous fiscal year. Based on the 996,355 shares of common stock outstanding, the 1948 fiscal year earnings amounted to \$1.54 per share. During this period, total dividends of \$1.00 per share were paid out to stockholders in equal quarterly distributions.

Further comparison between Sept. 30 and Dec. 31, 1948, is evident in the following cumulative financial data. The latter report shows net current assets of \$6,384,167, net working capital of \$33,55 per share. Also, net worth was \$6,768,993, or \$14.32 per share. The market capitalization for the company's common stock is currently around \$3 per share.

For the quarter ended Dec. 31, 1948, the company showed total sales of \$3,088,747 compared with \$5,975,288 for the like 1948 period. As a consequence, net income for the current period was down to \$130,072, in contrast with \$434,370 shown in the like quarter the previous year. As a result of declining earnings, Beech declared a dividend of 20 cents a share payable Feb. 20,

1949, carried of the 25 cents rate declared in previous quarters.

Now Beech is looking somewhat sullen during the December quarter. As of Sept. 30, 1948, unfilled orders were estimated at about \$13 million. On Dec. 31, 1948, the company's backlog was stated at approximately \$11 million, which, after an excess of about \$1.7 million in new business over deliveries during the year, left a backlog of about \$9.3 million.

For the fiscal year ended Sept. 30, 1948, Beech reported total sales of \$20,982,034, compared with net sales of \$24,141,220 during the previous year. With a lower backlog now available, it is likely that sales for the current fiscal year will be below that of 1948.

At last report the company's backlog consisted generally of contracts calling for the rebuilding and overhauling of Beechcrafts for the Navy, spare parts for the U.S. government and aircraft sold to individuals and general users. It is significant that five orders for about \$100,000 each for the Model B15 Beechcraft have been received with pending delivery during this year.

► **Cirrus-Cessna Aircraft Co.** which led the lightplane industry in dollar value of sales during 1948, also shows a those financial conditions. At of Sept. 30, 1948, net working capital amounted to \$4,779,875, equivalent to \$8.84 per share. Total net worth is \$6,085,751, or \$56 per share on the 108,000 shares of common stock currently outstanding. For the year ended Sept. 30, 1948, total sales amounted to \$12,529,631, compared with \$14,394,221 for the previous year. For the fiscal year 1949 projected net sales are \$12,916,411, or 41 cents per share, compared to 40 cents per share for fiscal 1948.

One of the surprising factors in Cirrus-Cessna's current financial position is its successful diversification in non-aircraft products. This approach led the company to bid for hardware contracts from the U.S. Army for construction of its flying boats. This contract, too, has been let, a division of only 10 cents per share last year, an obvious improvement in the company's financial position.

For the quarter ended Dec. 31, 1948, the company showed total sales of \$3,088,747 compared with \$5,975,288 for the like 1948 period. As a consequence, net income for the current period was down to \$130,072, in contrast with \$434,370 shown in the like quarter the previous year. As a result of declining earnings, Beech declared a dividend of 20 cents a share payable Feb. 20,

were completed in July, 1948. Cirrus turned up its backlog and during early autumn for entry in the commercial markets. Preliminary reports indicate a successful reception for the company's line.

Cirrus has also developed a line of hydraulic cylinders for both interior and exterior applications. Significantly is both 1949 and 1948 fiscal year aircraft and non-aircraft sales were about evenly divided in the company's total bookings. Cirrus takes pride in that it has good moral dividends for three consecutive years and, of course, shows consistent earnings during this time. The most recent dividend, 25 cents per share, was paid last December.

► **Piper-Piper Aircraft Corp.** through a series of recent capital adjustments, remains a major factor in the developing lightplane industry. For the fiscal year ended Sept. 30, 1948, the company showed a net loss of \$75,113. This was after a credit adjustment of \$736,893 on the evaluation of surplus inventories. Note holders also waived interest payments in the amount of \$12,315.

Following stockholders' approval in November, 1948, the preferred stock per share was reduced from \$10 to \$5 per share. This made possible the reduction of the credit to paid-in surplus in the amount of \$750,000, but provided no additional working capital. As of Dec. 31, 1948, Piper had \$1,000,000 of additional capital of \$937,500 following a net loss of \$113,478 for the quarter. Above effect is the \$100,000 shares of preferred stock outstanding. The stockholders' net worth was able to the common stock as of Dec. 31, 1948, was \$1,446,695 or about \$17.70 per share.

Piper-Bailey Aircraft Corp. has re-

ported net earnings of 90 cents per share for the year ended Oct. 31, 1948, virtually equivalent to the 91 cents per share shown for the previous fiscal year.

The company has \$16,685 common shares outstanding. It has recently announced that it has received a \$100,000 loan in recent weeks.

No current balance sheet, however, has been released publicly by Ryan since Oct. 31, 1948. At that date the company showed net working capital of \$3,351,499, or \$8.71 per share.

The company, however, was heavily involved in inventories at that time. The net worth was \$10,514 per share. As the company had a dividend of only 10 cents per share last year, an obvious improvement in the company's financial position of Ryan Aerospace is indicated since Oct. 31, 1948.

While each of the four principal aircraft manufacturers mentioned here, moreover, shows a degree of financial strength, all of these can be expected to continue to improve in the future. The industry is in the immediate future.

—Sibley Atchley

## NEW AVIATION PRODUCTS



### Megohmmeter

New portable-oriented type of "Megger" insulation tester, designated "Meg," for use by electrical maintenance men and repair shops is offered by James G. Biddle Co., 1314 Arch St., Philadelphia 7.

Meg (shown) is designed for testing control circuits, lighting and power installations, generators, cables, and insulation of motor and transformer windings.

In this device, hand generator is replaced by a power pack consisting of associated voltage step-up transformer and solenoid switch, offering constant 4,000 volt, 50 cycles.

A dials and also is available with handwheel and indicator, for use in field. It consists of the "Meg" type constant-voltage test unit and a galvanometer supplying 300 dc from any 115v, 50-60 cycle outlet. One end from the handwheel instrument and another from the switch to an a.c. outlet clamps over hand operation.



### Blind Rivet

A new series of rivets that can be installed by using an ordinary hammer is announced by Cherry Rivet Co., 212 Winston St., Los Angeles 13. Called "Cherry Drive Pro Blind Rivet," these consist of two parts—hollow steel member with the hole tapered toward the bottom, and serrated drive pin inserted part way into hole in rivet. Rivet shall end is slit longitudinally by two right-angle cuts.

Cherry Drive comes pre-tensioned.

the tapered bottom of the hole, then expand four sections at end, joint is sealed to give high resistance to moisture.

Use of diverse diameters and for special tools, fixtures or skilled labor and about half material thickness tolerance. Rivet is reported to have necessary shear and tensile strength to meet average requirements, and produce well rounded head when each sheet is fastened to human sections, or heavier gauge sheets to each other.



### High-Heat Switch

High-temperature thermal switch, designed for use as jet engine, rocket motor and afterburner controls, is offered by Coastal Products, Inc., 366 South Harrison St., Milwaukee 3.

Switch has a rating of 62,000 F, normally open. Minimum closure time for 100% horn is 100 ms. with  $\pm 10\%$ . Unit weighs 51 oz., probe is 3 in. long. Switch grounds on insulating base. Flange or screw type mounting is optional.

### Airport Spot Lamp

For airport landing and approach, 800-w., 80-w. reflector spot lamp, made by General Electric Co., Nela Park, Cleveland 13, Ohio, is designed to provide bright, long-range light beam that can be obtained with fixed lamp.

GE engineer report that spot distribution of light has been made possible by the use of a single and unique reflector lamp, by the development of a special lens, by the flattening of the inside surface of the bulb. Heavy lighting results in a flood pattern, and so lighting at all cause directions to appear as flat beams, they explain.

With 800-w. bulb, lamp has heat resistance of 1,000 deg. F., and is 32 deg. steps to 2000 F., and in 100 deg. steps to 2300 F.

Marker or air supply piping described Feb. 6 in this issue of *Aerospace* Automotive Corp., Miami, Fla., which was inadvertently designated *Aerospace* Automotive Corp.



### Metal Shock Mount

Unit shock mount, incorporating Met-Flex initial coating made of monel and stainless, now are being produced by Robinson Aviation, Inc., 11200 South Air Terminal, Teterboro, N.J.

These all-metal mounts are used to offer advantages over non-magnetic materials, since they are not affected by extremes of temperature and do not deteriorate because of oil or moisture.

Resilient material is inherently damped, load-sustained and stated to be durable for laydown measurements of government and commercial specifications.

Shift, permanent or idle, a high high damping action is provided through intrinsic action of Met-Flex materials, reducing amplification at resonance and offering greater structural stability and longer service life.

Previously, Robinson and Met-Flex only in its large V-shaped, mounting units.



### Indicates Temperature

Now, high-temperature-metal pellets to measure 2100, 2200, 2300, 2400, and 2500 F., have been developed by Test-Point, 132 West 22 St., New York 1.

Urth can run from 313 F., in 32 deg. steps to 460 F., in 90 deg. steps to 2000 F., and in 100 deg. steps to 2300 F.

Marker or air supply piping described Feb. 6 in this issue of *Aerospace* Automotive Corp., Miami, Fla., which was inadvertently designated *Aerospace* Automotive Corp.

# WHAT'S DOING

at Pratt & Whitney Aircraft?

We've just been reviewing some figures to see what happened at Pratt & Whitney Aircraft during 1949.

One thing that happened was that we continued to build and deliver substantial quantities of aircraft engines. During the year, we were in production on six basic sizes of piston engines for both military and commercial use. As you know, we also swung into production on our first jet engine, the Turbo-Wasp. All told, we shipped more than 2,400 engines in 1949.

There was a lot of work, a lot of planning, and a lot of headaches involved in this manufacturing accomplishment. On the piston engines, for example, quantity orders by our customers for various models of engines fluctuated abnormally during the year, requiring repeated revision of our production schedules. Then too, we made thousands of design improvements in these production models, requiring new tooling and changes in manufacturing methods. On the jet engines, of course, we were plagued by all the inevitable troubles involved in putting any completely new product into production. Despite the problems, we delivered almost 7,000,000 horsepower in engines, and the equivalent of 40% additional horsepower in spare parts.

But the physical production of engines wasn't the only thing that happened at Pratt & Whitney during 1949. In fact, there wouldn't have been any production if those engines hadn't possessed the superior performance characteristics and the dependability that brought orders from our customers. So, an intensive engineering program of research, design, development and test has always been the mainstay of our progress at Pratt & Whitney. Out of it has already come the improved performance of our current types of engines. And out of it will soon come still better Pratt & Whitney engines to meet the rapidly advancing requirements of both military and commercial operators.

## HOW MUCH ENGINEERING WORK DID WE DO LAST YEAR?

- 1 Million Man-Hours?
- 2 Million Man-Hours?
- 3 Million Man-Hours?
- 7 Million Man-Hours?



Last year, Pratt & Whitney engineers put in a total of nearly 10,000,000 man-hours. To make a year like 1949 possible, of course, no one man could ever do the work if he lived a million years. The engineering problems are so complex and varied that our engineers, staff, company of chemists, metallurgists, tooling experts, production engineers and countless other executives, each comprising his series of knowledge and skill in the solution of certain parts of the problem. In all this time and effort there were three big shifts in the organization department to follow, a move directly to the engineering department in December, and via the expansion of parts and engines required for new designs.

## HOW MUCH EXPERIMENTAL TESTING DID WE DO IN 1949?

- 10,000 Hours?
- 18,000 Hours?
- 52,000 Hours?
- 70,000 Hours?



Every time a new part is designed, we have to make sure it will function properly. Every time we change an existing part we have to do the same. If the change produces the desired improvement. And every time operating troubles develop in service, we have to find out the cause of the trouble. This involves the use of a great many types of experimental equipment, including a large number of individual parts and of complete engines. In addition to these a thousand hours of flight testing, we carried out, last year, more than 10,000 hours of such experimental testing. This included more than 1,000 hours of high altitude testing of jet engines and more than 30,000 hours of functional testing of major components such as cylinders, boosters, turbines and compressors.

## HOW MANY DESIGN CHANGES WERE MADE DURING THE YEAR?

- 3,831
- 11,417
- 19,000
- 32,000



The design of an aircraft engine is never finished until that aircraft has been built and goes into production. It must be constantly refined and improved in order to provide better performance, or to reduce manufacturing time and cost, or to correct troubles encountered in actual service. Just to an example, the main compressor stage of the production model of Pratt & Whitney's engine design 1949, required 10 changes every working day. This seasonal changing more than 10,000 drawings, and these are only the changes that appear in production models of engines. Beyond this, the research and development department at Pratt & Whitney has 10,000,000 drawings in its files, and these are the 21,000 basic new drawings and design layouts copied on for experimental engines, and you get a grand total of more than 31,000 drawings that were either made or changed during the year — an average of more than 1,000 every week.



**PRATT & WHITNEY  
AIRCRAFT**

EAST HARTFORD, CONNECTICUT

MORE PLANES FLY MORE MILES WITH  
BENDIX RADIO THAN ANY OTHER MAKE



## **Whatever the Plane or Purpose . . .**



Every major airline relies on Boeing flight communication and navigation equipment—a position based on strong performance made from extremely high standards in all parts of the world.

During the 1970s, Benthic Buoys were used to observe the movement of single estuarine species, and later a combination of many estuarine species were used to create Benthic Boxes, a common line of equipment used.

the particular type, quantity, quality, and  
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*Bendix Radio*

**BENDIX RADIO**  
*is the Choice*

SENIOR RADIO DIVISION **eff**  
BALTIMORE 4, MARYLAND



Dear John Smith, President, Smith Corp., 123 Main Street, New York 10, New York

PS Oct VHF Oscillations Range  
Navigation system is a form of  
radio wave navigation radio.

Wait for booklet and get up-to-date on the great development.

104



## TRUSCON Vertical Lift CANOPY DOORS

*united in action...*



Always secure after  
and others partially closed



Top: Transoceanic Lift Canopy-Door installation. (Inset) The Long Wharf, San Francisco, California. The Arctic Canopy. (Inset) The pier.

Bottom: Completely closed to open action of the United Air Lines installation.

## for United *in action*

Up or down they go ...

quickly, quietly, easily ... both sections

simultaneously ... in each of these three 130 x 35 feet Transcon

Vertical Lift Canopy-Door installations at the United Airlines Hangar,

San Francisco, California. Conservation of space...conservation of power

...conservation of building height...these are special Transcon Vertical Lift Door features that help develop longer efficiency. The doors can be built to extreme heights and widths, in as many individually-operated sections as desired, without posts or supports between sections. Experienced Transcon Engineers are available to help develop specifications exactly suited to your particular needs. Illustrated literature on complete line of Transcon Hangar and Industrial

Doors free on request.

United Airlines are financing line of Transcon Industrial Doors. The Transcon Steel Company manufactures a complete line of Metal Windows and Metalhead Operators. Send today for "Catalogue" featuring Steel Windows and Operators and Hangar Steel Doors. Complete Catalogue free from Transcon.

**TRUSCON STEEL COMPANY**  
Division of United States Steel Corporation  
YOUNGSTOWN, OHIO  
Windows and other items in painted steel

## AIR TRANSPORT

### CAB Reports on Nonsked Crash

Investigation of Coastal Cargo Co. DC-3 accident indicates icing and crew sleepiness was cause.

For the second time in about two years, Civil Aeronautics Board safety investigators have issued a report suggesting that the pilot of a non-scheduled DC-3 was asleep prior to the crash of their plane.

Latest accident involved a Coastal Cargo Co. DC-3 which crashed near Bayardstown, Md., on Jan. 6, 1949, killing the pilot and co-pilot, the only occupants. Probable cause of the mishap, CAB declared, "was loss of control of the aircraft, which resulted from icing conditions, turbulence and lack of alertness on the part of the crew." As a result, the plane spun, and during the spin, or otherwise, memory fails the crew, seven actions were performed which caused failure of the left horizontal stabilizer and the elevator.

► **Rest Period.** CAB-CAB said the crew had only a 22-hour period for rest prior to making the flight, but added that it could not be determined how much rest was actually taken by the pilot and co-pilot during the time available. The crew had previously flown

for an unusually long period of 20 hr. 27 min., and CAB stated, the captain especially was known for sleeping in the cockpit.

(Agricultural practice that a pilot can receive 24 hr. of rest before being assigned further duty after having flown more than 8 hr. during any consecutive 24 hr. period can also specify that a pilot shall not be on duty for more than 16 hr. of any consecutive 24 hr.)

"Accordingly," the report continued, "the captain and possibly the co-pilot may have fallen asleep, or they were not alert enough to recognize and correct for a wing roll which became uncontrollable, causing severe vertical control difficulties of the aircraft was lost." The plane was equipped with automatic pilot, and it was company policy to use it on evening flights.

► **Plane Overloaded.** The report stated that the DC-3 was 44 lb. overloaded when it left Palm Beach, Fla., for Boston with 6355 lb. of cargo. After refueling at Springfield, N. G., the craft was 644 lb. overloaded and was still about 14 lb. overfilled when

it crashed. The latter overload was considered the main factor to be a factor in the accident.

The plane was not equipped with de-icing boots for the wings and empennage, but it did have propeller anti-icing equipment. Civil Air Regulations state that the plane provided that plane ought to have de-icing equipment only if there were dangers with regard to propellers and with other parts of the aircraft as are essential to safety."

► **rade Mishap Recalled.** Coast's incident involved a mishap involving a non-scheduled Air Transport DC-3 which crashed near Melbourne, Fla., July 13, 1947, killing 12 passengers and the pilot. In that mishap, CAB found that the pilot had flown over 23 hr. of the preceding 37 to 45 hrs. and that they had little opportunity for rest on the ground prior to starting the flight.

The report said that there was no direct evidence to indicate that the pilots of the plane DC-3 were sleeping, but under the circumstances it would be surprising if they did not fall asleep as the plane cruised on automatic pilot to the early morning hours, gradually losing altitude." The flight plan also was overflown by 2847 lb.-where it left Newark for Miami. Investigation showed that had a defective carburetor and spark plug.

### Findings Issued in Gander Accident

The crew's attempt to continue a landing approach using both GCA and visual references to the ground under conditions of restricted visibility probably caused the TWA DC-4 accident at Gander, Newfoundland, last Mar. 2.

Official Civil Aeronautics Board is part on the map which states that there was no malfunctioning of the aircraft, engine or GCA equipment prior to or during the approach. But the landing was complicated by severe windshear.

Last spring an Air Line Pilot Association spokesman blamed GCA for the accident, claiming the pilot was not warned as was dangerously low. The spokesman called for an investigation of GCA equipment limitations.

► **Flight Planner.** Bound from New York to Ronald, the DC-4 struck power lines at least 37 ft. below the GCA glide path. The point was over 1600 ft. from the approach end of the runway and only 35 ft. above the runway's elevation.

From a point 65 ft. beyond the power lines and for a distance of 150 ft. toward the nose of the plane's left wing, fuselage and left main landing gear



AA "PRESIDENT'S TROPHY"

American Airlines' pilot of non-scheduled section of U. S. cargo company's Pan Am's Trophy for completing 1949 without accident resulting in injury to passengers or personnel. The 97 enroute and 181 direct flights flew an estimated 20 million miles in 110,609 hours. President C. E. Smith, second from right, is shown presenting award to Tim Boyd, regional operations director, and H. L. "Red" Clark, regional supervisor of flight, at end of fifth annual contest. On right, CAB administrator of the first region, is standing at the right of American's president.

cleared the tops of small trees. About 150 ft. from the power line the right wing tip contacted the snow-covered ground and scraped along the surface for 60 ft., when it struck a second. The impact bent the wing forward at an angle of about 45 deg., 3 ft. inverted from the tip.

According to the record, the right wing leading edge made a wide, narrow 90 deg. turn in the snow. The nose wheel did not touch the ground at one time.

► **Alaska Airlines.** Despite the contact with the ground, which damaged the DC-4 substantially, the plane became fully airborne 1,500 ft. from the end of the runway. It was flown to the airport and landed safely without injury to any of the 24 passengers or nine crew.

At the time the DC-4 was cleared to make a GCA straight-in approach, weather was 400 ft. overcast, visibility two miles with light freezing drizzle, light snow and fog. (Weather at both alternate airports was well below minimums.) The accident drew no comment from the national drawee or from Trans-Australia Airlines or Garuda.

► **Long Distance.** Windshield damage was incurred on two occasions but had to be cleared off when the defrosted rubber and red sealing compound allowed alcohol fumes to enter the cockpit through the windshield, creating a fire hazard. As a result the windshield became covered with ice, impeding forward vision except through an opening about one-fifth of the area of the left windshield as an upper left corner.

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reference to the ground and by following GCA instructions. "The," CAB declared, "is not considered standard piloting technique since the use of either method alone requires the use divided attention and alertness of the pilot."

Furthermore, the approved GCA procedure states that upon reaching authorized minimums proceed in accordance with standard technique, or if unable to maintain visual reference, assume a permitted visual approach procedure. Once the captain elected instead, he did not again refer to the altimeter but relied entirely on GCA instructions for changes in altitude.

"This was not in accordance with approved procedure, as GCA, as an approach had not specified otherwise and from this point on the pilot is solely responsible for safe operation of the aircraft." Since the captain did not lower gear and flaps until he was close to the final approach—about 2 miles out—this may have caused the commander of the aircraft to conclude that the TAA was at fault.

The final rule of the approach was flown consistently low, and was repositioned to the right by the GCA operator. Nevertheless, the pilot's diversion was not fully corrected, and it struck the power line.

## CAB Permits NWA To Lower Cargo Rates

Northwest Airlines has received Civil Aeronautics Board permission to establish a new cargo rate structure for its Alaska operation, based on a 10 percent reduction in the rates now in effect at Anchorage, Alaska, in January 1950, at the equivalent of 12 miles a ton mile and to set rates on various commodities from the U.S. to Alaska that will yield about 10 cents a ton mile.

The low rates, representing a substantial reduction from present levels, will be effective for only 90 days period.

NWA had wanted even lower U.S.

Alaska cargo traffic. Main objective of the new rates is to develop cargo traffic on NWA's direct link from the U.S. East Coast through Minneapolis to Anchorage.

## Australian Airline Gets Poll Support

(McGraw-Hill World News)

McBride—After announcement of the third consecutive operating loss by Trans-Australian Airlines, the government-owned airline is still 46 percent of the people surveyed by the Australian College of Management, which reported that the airline had yet agreed entirely on the alternative bid offered entirely on GCA instructions for changes in altitude.

"This was not in accordance with approved procedure, as GCA, as an approach had not specified otherwise and from this point on the pilot is solely responsible for safe operation of the aircraft." Since the captain did not lower gear and flaps until he was close to the final approach—about 2 miles out—this may have caused the commander of the aircraft to conclude that the TAA was at fault.

Surprisingly, the proportion of those who favored lower rates as a general poll a year earlier when the Labor government was in power was 40 percent, while 50 percent were in favor of maintaining the present rates. The TAA's proposal to restructure rates in order to reduce losses by 10 percent was 40 percent, while 50 percent were in favor of maintaining the present rates.

TAA carried 521,000 passengers in 1949, compared with 401,000 in 1948. ANA, its principal private competitor, lost business in the same period, with bookings down to 396,000 from 428,000 in 1948.

## Pioneer Still Leads Feederline Pack

Continuing in the role of the nation's most prosperous feeder, Pioneer Air Lines gained a net profit of \$151,558 (\$1.68 a share) during 1949, compared with \$119,532 (\$1.32 a share) in 1948.

The carrier and its regional profit last year were attributable largely to a \$19,517 increase in passenger revenue, freight and express revenue rose \$15,266 and charter revenues increased \$12,632.

Current net operating revenue for 1949 was \$1,345,478. Net operating income before a 10 percent tax was \$117,555 in 1949, but \$109,532 in 1948.

Using 11 DC-3s, PAL flew 164,112 passenger, 29,395.31 revenue passenger miles in 1949, up 15 percent over 1948. Operating expenses last year were 79.32 cents a mile, against 79.88 cents in 1948.

The nation's oldest feeder, Pioneer will complete its fifth year of operations on Aug. 1.

AVIATION WEEK, February 10, 1950

## EAL Miami Traffic Hits January Peak

Bad weather at many ports of the U.S. during January resulted in spotty airway traffic trends.

United Air Lines had an estimated 803,000 passenger miles during the month, down one-half of one percent from January 1949, and 4.5 below the December, 1949, level. However, UNL's January, 1949, freight miles was up 11 percent over the same 1948 month, totaling 1,075,750 passenger and miles total.

By the first of February, the carrier's passenger traffic also moved ahead of 1949 levels. During enforcement date, United believed its 1949 traffic should fall quite rapidly the following year.

► EAL Retired—After a slow start, Eastern Air Lines had reported licensing business on its route to Miami. During January, the company handled a record 46,983 passengers at Miami Intercoastal Airport, 7931 more than in the same month for 1949. EAL said operations to Miami for February were heavier than usual, but starting another growth period.

Although plagued by fog at long eastbound intervals, Curtis Airlines flew about 5 percent more revenue passenger miles in January, 1950, than in January, 1949.

## FAWA Challenges TWA at PAA

The Civil Transport Workers Union's eastbound covering some 800 Pan American Airways employees filed a strike challenge by the Federation of Airlines Workers of America.

FAWA is a new state organized by the expelled left-wing leaders of TWU's

Pan American Local 506. A poll of the workers on their choice between the two unions at a pretrial under National Mediation Board supervision.

Lest neither of them would be a secure blow to TWA, since it would lose almost half its airline membership, it would not act, President Michael J. Quigley and Comptroller drug within the month.

TWA's estimate with PAA now weakness ground service, flight service and passenger personnel, guards, flight radio officers and port stewards.

## IAM Opposes NWA 'Farm-Out' Plan

Right of Northwest Airlines to "farm out" its coalfields, diversion and 5000 airway ship work is involved in the strike threat of 1500 NWA employees who are members of the International Union of Mine, Mill and Smelter Workers.

Strike notice was given by Northwest to the New York office of the NWA's farm-out unit, Pan American Airways, Inc., which has 10 DC-3s which will be used initially in the new task. Another Northwest airline, American Trans, should have authority to operate to Miami and New Orleans but is presently serving only Miami.

► TWA Plans More Holy Year Flights

TWA has announced plans to increase passenger flight frequency between New York and Rome to 38 flights a week, effective Mar. 1, for the accomodation of Holy Year travelers. The union's slogan, which are an IAM, brother, the union slogan, is "Proud and Fighting," and the 51st Pan American to Great Central Air Terminal, Cincinnati, Calif., for overnight, and the conversion of two planes to cargo. This is particularly disastrous to IAM because the union has spent some \$100,000, without success, trying



## LONG AND SHORT OF IT

Tony Alfonso, Indianapolis, became the only scheduled domestic carrier operating both lightplane and propjet equipment when it recently inaugurated Chicago-Indianapolis-Denver service with single-engine Beech Bonanza, Indianapolis-Cincinnati service with Bonanza, 50

part-time, going to Miami a year earlier. The first has been operating as Indianapolis-Greenwood, Ind., with DC-3 since November and hopes repeat conditions will permit use of the larger plane over all its routes to names.

to expand Great Central Air Terminal.

Northwest claims it has violated its agreement with IAM by having the union's members at its various ports under National Mediation Board supervision.

Lest neither of them would be a secure blow to TWA, since it would lose almost half its airline membership, it would not act, President Michael J. Quigley and Comptroller drug within the month.

## Cruzeiro Will Fly Brazil-U.S. Routes

The Brazilian airline, Servicos Aereos Cruzeiro do Sul, Ltda., has received a foreign air carrier permit from the Civil Aeronautics Board authorizing it to fly from Buenos Aires to New York and Washington via intermediate stops at Theodore, Puerto Rico and the Dominican Republic.

The authorizations for Cruzeiro's new service are ascribed with terms of a solicited or transport agreement now in effect between Brazil and the U.S. which will be used initially in the new task.

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### COMET'S FIRM FOOTING

De Havilland Aircraft Co.'s prototype Comet jet transport is three days beyond the 100-flight test mark. The Comet, sporting its RDMC stripes, made 101 flights totaling 1514 hr. as the 195 days of its trials up to Dec. 11, 1949.







# EDITORIAL

## Weeping for the Rails

A new and surprising bit of unenlightened public relations comes of your rails for the railroads and their right. It indicates a big chink in the current argument that the rail have learned their lesson in public service and public relations.

To transportation people it will be no surprise that the magazine of the Federation of Railway Progress broadsheet the incident. This gallant organization is the brain child of the railroads, vocal critics of antitrust legislation, Robert B. Young. As far as we know, the only outside members of the Federation are the three roads Mr. Young virtually controls.

The February issue of Railway Progress, the group's interesting and audience magazine, carries a factually nothing report on the inadequate passenger service between Portland and Seattle. The writer is a Portland newspaperman who also happens to be a public figure, a member of the Oregon State Senate.

Portland has 465,000 persons. It is 186 miles south of Seattle, largest city in the area, with about 500,000 population. Although the state of Washington has increased 45 percent in population since 1940 and Oregon 39 percent, the train service is exactly the same as a decade ago—four round trips a day. Presumably all local traffic has been detailed to the buses.

"If there is any part of America more neglected from the standpoint of intercity train service than the Pacific Northwest, only the lack telescope could locate it," the writer decides.

Despite mushrooming population, increasing schedules of but four, a fast railroad right-of-way already available, an almost water-level stretch of well-litigated track and little if any adverse weather the year around, the three railroads between Portland and Seattle still operate what amounts to 1932 schedules with 1952 equipment.

Meanwhile, the state of Washington has decided to spend millions of dollars in tax funds to widen the highway to four lanes, which the railroads complete in subduing the buses with the public treasury.

One state senator said, "The railroads have abandoned local passenger traffic to the buses. They've virtually pushed the people out on the highways."

Thus the three railroads appear to be letting history repeat itself. That is similar to what happened all over the country when the railroads failed to keep up with the march of progress. Here appears to be a full-blown history that makes it difficult, indeed, to believe that bus "look" business away from the rails. The rail should stay first.

The fact that the three railroads in this area operate the truck segment in a pool may be a tip-off. A few

weeks on pooling may interest other people—including those in the non-roads.

"Like a person, a railroad enjoys credit for what it accomplishes. That is difficult when services are pooled. Tickets are interchangeable. The trains are dyed in anonymity. Unless a passenger uses the date, he is unlikely to know which company is transporting him. This hardly encourages a railroad to put forth its all."

We might add that pooling can also encourage mediocrity and "conservatism" by masking the identity of the company that dares to put such "service" on the public Money-lover company.

Two months before the article was to appear, the editor of Railway Progress sent copies to the chief executives of the three railroads, requesting comment. Northern Pacific's president wrote that he did not care to offer any. Great Northern's president, didn't. Union Pacific's president did not write at all.

Such incidents are worth quoting the next time we are tempted to wimp for the unenlightened railroads, their mass of the unattractive of public highway "subsidies" for buses, the plants of under competition from other roads that really offer public service, and their plants that they do not have the opportunity to tell their side of the story to the public.

(Three railroad chief executives show they are dead on their feet, public relations wise. One such article, and three such presidential refusals to comment on facts, can consider the effect of no one knows how many carefully written press releases issued by the Association of American Railroads in Washington, where good public relations is practiced. Maybe all of this has a lesson to certain other railroad presidents, too.)

## Safe Air Shows

Spring is not far away. These come summer and fall as well. It is not too early to renew a campaign for sensible air shows that sell—not kill—airshows.

We are still hearing from reader about Aviation Week's editorial campaign on that subject last fall. Eugene T. Fox, manager of Worcester (Mass.) Municipal Airport, says:

"Since your joint editorial on Worcester Air Show in your Nov. 7 issue I have been remingtoned with inquiries. The terrific curiosity of aviation people all over the country about a safe and sane air show indicates it is time for a change in the make-up of these shows."

"Many thanks for the mention in your editorial and more power to you in your crusade for aviation safety."

Stunts and dangerous stunts at air shows kill more than the participants or bystanders. They are mass production killers of the public's confidence in commercial aviation.

—Robert H. Wood

## New ADVANCED H-5 GYRO-HORIZON



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